

EDUCATIONAL HETEROGAMY AND MARITAL QUALITY: A NEW LOOK AT THE OLD QUESTION(S)

Mieke Eeckhaut¹, Bart Van de Putte¹,
Jan Gerris² & Ad Vermulst²

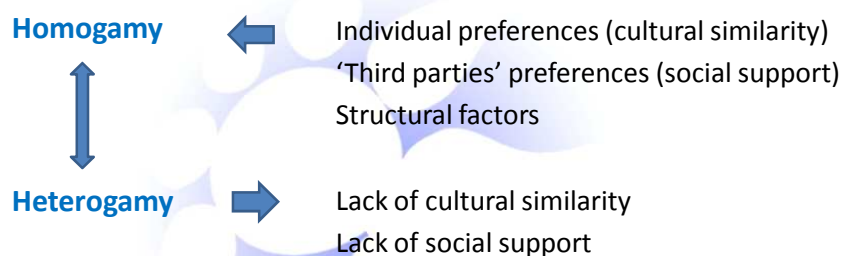
BSPS conference, Exeter, September 14th 2010

¹ Department of Sociology, Ghent University, Belgium

² Behavioral Science Institute, Radboud University Nijmegen, The Netherlands

Correspondence: Mieke Eeckhaut, Korte Meer 5, 9000 Ghent (Belgium) – Mieke.Eeckhaut@UGent.be

THE HETEROGAMY HYPOTHESIS



Consequences in terms of:

- Relationship quality
- Relationship stability
- Other ...

EMPIRICAL RESEARCH

- Focus on heterogamy in ethnicity, religion, and class
BUT: Ethnic, religious, class homogamy ↘
Educational homogamy ↗
- Mixed empirical evidence for the heterogamy hypothesis
e.g. Findings concerning educational heterogamy:

A 'traditional' heterogamous marriage is preferable

→ Economic aspect of education



Educational differences are of no importance

→ ?

Lack of conceptual clarity

EMPIRICAL RESEARCH

Two heterogamy effects:

Additive heterogamy effects

- Additive effect of some difference variable (e.g. educ. M - educ. W)
→ What is the effect of the difference in education between the man and woman?
- 'Classic' heterogamy theory
(Symbolic interactionism, habitus theory, etc.)

Moderational heterogamy effects

- Interaction between characteristic M and W (e.g. educ. M * educ. W)
→ Is the effect of the education of the man moderated by the education of the woman, and/or vice versa?
- Theories concerning the division of marital power
(Balance theory, exchange theory, etc.)



These two heterogamy effects need to be differentiated

DATA

- 'Child-rearing and family in the Netherlands, 1990'
- 643 married couples with children:
 - First marriages
 - Both partners born in the Netherlands
- Variables:

	N		N	Mean (s.d.)
Independent variables		Dependent variables		
Completed education, man	643	Marital satisfaction, man	629	6.08 (0.95)
Less than elementary	16	Marital satisfaction, woman	639	6.05 (1.06)
Elementary	38	Control variables		
Lower technical or vocational	204	Period of the marriage	643	
(First classes of) (lower) gen. secondary	85	≤ 1970	166	
Intermediate vocational	110	> 1970	477	
Upper general secondary	46	Marriage duration	643	17.38 (3.37)
Higher vocational	79	Age at marriage of the man	643	25.11 (3.83)
University	65	Age at marriage of the woman	643	22.68 (3.04)
Completed education, woman	643	Number of children	643	2.49 (1.04)
Less than elementary	10	Age of the youngest child	643	11.4 (2.82)
Elementary	83	Employment situation of the woman	643	21.2 (9.57)
Lower technical or vocational	188	Household income	643	
(First classes of) (lower) gen. secondary	139	≤ €2100	107	
Intermediate vocational	114	€2100 - €3250	251	
Upper general secondary	40	€3250 - €4500	161	
Higher vocational	51	> €4500	124	
University	18	Religiosity of the man	643	
		No member of a church or relig. community	308	
		Member and visits a couple times a year/month	335	
		Religiosity of the woman	643	
		No member of a church or relig. community	289	
		Member and visits a couple times a year/month	354	

DIAGONAL REFERENCE MODELS

$$Y_{ijk} = p * \mu_{ii} + (1-p) * \mu_{jj} + \underbrace{\sum \beta_l * x_{ijl}}_{\text{Covariates}} + \epsilon_{ijk}$$

$$0 \leq p \leq 1$$

$$i = 1, \dots, T;$$

$$j = 1, \dots, T;$$

$$k = 1, \dots, n_{ij}$$

The effect of five commonly studied heterogamy variables:

- Three **categorical** (2categories / 3categories / 5categories)

2 categories

	Education woman			
Education man	1	2	3	4
1				
2				
3				
4				

3 categories

	Education woman			
Education man	1	2	3	4
1				
2				
3				
4				

5 categories

	Education woman			
Education man	1	2	3	4
1				
2				
3				
4				

- Two **numerical** (signed / absolute difference in education)

Signed difference in education

	Education woman			
Education man	1	2	3	4
1				
2				
3				
4				

Absolute difference in education

	Education woman			
Education man	1	2	3	4
1				
2				
3				
4				

DIAGONAL REFERENCE MODELS

$$Y_{ijk} = p * \mu_{ii} + (1-p) * \mu_{jj} + \underbrace{\sum \beta_l * x_{ijl}}_{\text{Covariates}} + \varepsilon_{ijk}$$

$0 \leq p \leq 1$
 $i = 1, \dots, T$;
 $j = 1, \dots, T$;
 $k = 1, \dots, n_{ij}$

Additive heterogamy effects

- The heterogamy variables are **added** in five separate equations

$$\rightarrow Y_{ijk} = p * \mu_{ii} + (1-p) * \mu_{jj} + \sum \beta_l * x_{ijl} + \sum \beta_w * A_{ijw} + \varepsilon_{ijk}$$

Moderational heterogamy effects

- The heterogamy variables are incorporated as **effects on the salience parameter p** in five separate equations

$$\rightarrow Y_{ijk} = (p + (\sum \beta_w * M_{ijw})) * \mu_{ii} + ((1-p) - (\sum \beta_w * M_{ijw})) * \mu_{jj} + \sum \beta_l * x_{ijl} + \varepsilon_{ijk}$$

RESULTS – BASELINE MODELS

Comparison of the Baseline Models, based on R^2
(ΔR^2 : comparison with previous model).

	Men	Women
Baseline Model with education	0.042 **	0.032 *
Baseline Model with education and control variables	0.053	0.058 *

The educational variables explain a substantial part of the variation in marital satisfaction

The ten control variables are of no (men), or only marginal (women) importance

The education of the man is dominant for the marital satisfaction of both the man and woman

Only one significant effect for the CV: a negative effect of the *age at marriage of the woman*

* $p < 0.100$, * $p < 0.050$, ** $p < 0.010$

Parameter estimates for the Baseline Models with education and control variables (SE).

	Men	Women
p	0.989 (.212)	0.968 (.158)
μ_{11}	5.613 (.267)	5.721 (.281)
μ_{22}	5.742 (.181)	5.355 (.204)
μ_{33}	6.246 (.088)	6.185 (.098)
μ_{44}	6.147 (.111)	5.926 (.123)
μ_{55}	6.147 (.103)	6.082 (.115)
μ_{66}	6.102 (.149)	5.914 (.166)
μ_{77}	5.899 (.124)	5.941 (.132)
μ_{88}	5.791 (.142)	6.023 (.153)
b_{pm}	0.017 (.064)	0.080 (.070)
b_{md}	-0.010 (.018)	-0.007 (.020)
b_{amm}	0.016 (.012)	-0.001 (.014)
b_{amw}	-0.020 (.016)	-0.033 (.018) *
b_{nc}	0.028 (.038)	0.069 (.042)
b_{ayc}	0.000 (.016)	-0.007 (.018)
b_{ayw}	0.002 (.004)	-0.005 (.004)
b_{hi1}	0.006 (.066)	0.059 (.072)
b_{hi2}	-0.067 (.070)	0.042 (.077)
b_{hi3}	-0.008 (.085)	-0.018 (.094)
b_{rm}	-0.071 (.066)	0.054 (.074)
b_{rw}	0.086 (.067)	-0.100 (.075)
N	629	639

RESULTS – ADDITIVE HETEROGAMY MODELS

Model selection for the Additive heterogamy models, based on R^2
(ΔR^2 change: comparison with *Baseline Model*).

	Men	Women
Baseline Model	0.053	0.058
Baseline Model + Heterogamy		
Two categories	0.053	0.059
Three categories	0.056	0.059
Five categories	0.059	0.061
Signed difference in educational levels	0.060 **	0.061 **
Absolute difference in educational levels	0.055	0.058

Best fitting Additive heterogamy models:
Signed difference in educational levels

Marital satisfaction man is higher when education
man > woman
Marital satisfaction woman is not signif. affected

+ $p < 0.100$, * $p < 0.050$, ** $p < 0.010$

Parameter estimates for the best fitting
Additive heterogamy models (SE).

	Men	Women
μ	0.959 (.210)	0.903 (.150)
μ_{11}	5.764 (.278)	5.796 (.307)
μ_{22}	5.822 (.185)	5.382 (.205)
μ_{33}	6.276 (.089)	6.220 (.102)
μ_{44}	6.151 (.112)	5.917 (.127)
μ_{55}	6.080 (.108)	6.048 (.122)
μ_{66}	6.014 (.157)	5.865 (.181)
μ_{77}	5.749 (.143)	5.839 (.156)
μ_{88}	5.647 (.156)	5.940 (.173)
b_{pm}	0.017 (.063)	0.080 (.070)
b_{md}	-0.010 (.018)	-0.008 (.020)
b_{amm}	0.017 (.012)	0.000 (.014)
b_{amw}	-0.018 (.016)	-0.033 (.018) +
b_{nc}	0.025 (.038)	0.068 (.042)
b_{ayc}	-0.002 (.016)	-0.008 (.018)
b_{ew}	0.002 (.004)	-0.004 (.004)
b_{hi1}	-0.001 (.065)	0.053 (.072)
b_{hi2}	-0.076 (.070)	0.037 (.077)
b_{hi3}	0.019 (.085)	-0.003 (.095)
b_{rm}	-0.070 (.066)	0.055 (.074)
b_{rw}	0.079 (.067)	-0.104 (.075)
b_{sd}	0.063 (.029) *	0.040 (.031)
N	629	639

RESULTS – MODERATIONAL HETER. MODELS

Model selection for the Moderational heter. models, based on R^2
(ΔR^2 change: comparison with *Baseline Model*).

	Men	Women
Baseline Model	0.053	0.058
Baseline Model x Heterogamy		
Two categories	0.054	0.058
Three categories	0.056 **	0.059
Five categories	0.054	0.061 **
Signed difference in educational levels	0.055	0.059
Absolute difference in educational levels	0.054	0.058

Best fitting Moderational heterogamy models:
Three categories (men) & Five categories (women)

Effect of education man on marital satisfaction man
is higher when education man > woman
No significant effect for marital satisfaction woman

+ $p < 0.100$, * $p < 0.050$, ** $p < 0.010$

Parameter estimates for the best fitting
Moderational heterogamy models (SE).

	Men	Women
μ	0.905 (.191)	1.000 (.207)
μ_{11}	5.265 (.449)	5.834 (.206)
μ_{22}	5.653 (.207)	5.505 (.190)
μ_{33}	6.229 (.092)	6.197 (.095)
μ_{44}	6.145 (.114)	5.913 (.112)
μ_{55}	6.151 (.095)	6.116 (.121)
μ_{66}	6.127 (.132)	5.924 (.185)
μ_{77}	5.952 (.100)	5.822 (.173)
μ_{88}	5.817 (.126)	6.009 (.181)
b_{pm}	0.021 (.064)	0.076 (.070)
b_{md}	-0.010 (.018)	-0.008 (.020)
b_{amm}	0.016 (.012)	-0.001 (.014)
b_{amw}	-0.020 (.016)	-0.032 (.018) +
b_{nc}	0.029 (.038)	0.070 (.042) +
b_{ayc}	-0.001 (.016)	-0.006 (.018)
b_{ew}	0.002 (.004)	-0.005 (.004)
b_{hi1}	0.012 (.065)	0.046 (.070)
b_{hi2}	-0.075 (.070)	0.045 (.076)
b_{hi3}	-0.008 (.084)	0.000 (.092)
b_{rm}	-0.066 (.066)	0.054 (.074)
b_{rw}	0.086 (.067)	-0.104 (.075)
b_{scat}	0.365 (.190) +	-0.375 (.293)
N	629	639

CONCLUSION:

Additive heterogamy effects ↔ **Moderational** heterogamy effects

'Classic' heterogamy theory

Theoretical

Theories concerning marital power

+ effect when educ. M>W
inconsistent results

Empirical

Men
Women

↗ effect educ. M when educ. M>W
inconsistent results

Micro-economic specialization theory

Theories concerning marital power

Two conceptually different types of heterogamy effects, which can lead to widely different conclusion concerning the effect of (educational) heterogamy !!

Hedera | Health and demographic research
Ghent University

THANK YOU FOR YOUR ATTENTION!

Questions?

Correspondence: Mieke Eeckhaut, Korte Meer 5, 9000 Ghent (Belgium) – Mieke.Eeckhaut@UGent.be

Hedera | Health and demographic research
Ghent University